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ABSTRACT

A proposed agenda to study why minority participation in graduate education is so limited and so often unsuccessful is presented. Considerations to bear in mind include: what kind of financial returns minority students receive as a result of completing graduate school; the limited financial support available for graduate education; the lack of academic and social support specifically available to minority graduate students; and factors that compete with graduate school for a student's time and money. The differences between minority and majority students are compared. Questions related to underrepresentation of minorities include the following: Are professional programs so attractive that they draw students away from graduate education? Is the bachelor's degree so attractive in terms of employment and income potential that a graduate degree has little more to offer? and Do opportunity costs for minority and majority students differ in a way that would explain the minority underrepresentation? Some of the points of focus are: where the students go once they graduate; actual costs of graduate education; student indebtedness; and where financial aid comes from. Until there is a better understanding of the financial pressures minority students face, it is difficult to increase their numbers in graduate institutions and keep them there. Future research must consider such problems as: what types and amounts of financial aid will increase minority access and retention; what state and federal governments, professional associations, philanthropic foundations, and colleges and universities are doing about the problem; and what makes certain programs more effective in achieving minority access and retention. Contains 25 references. (SM)

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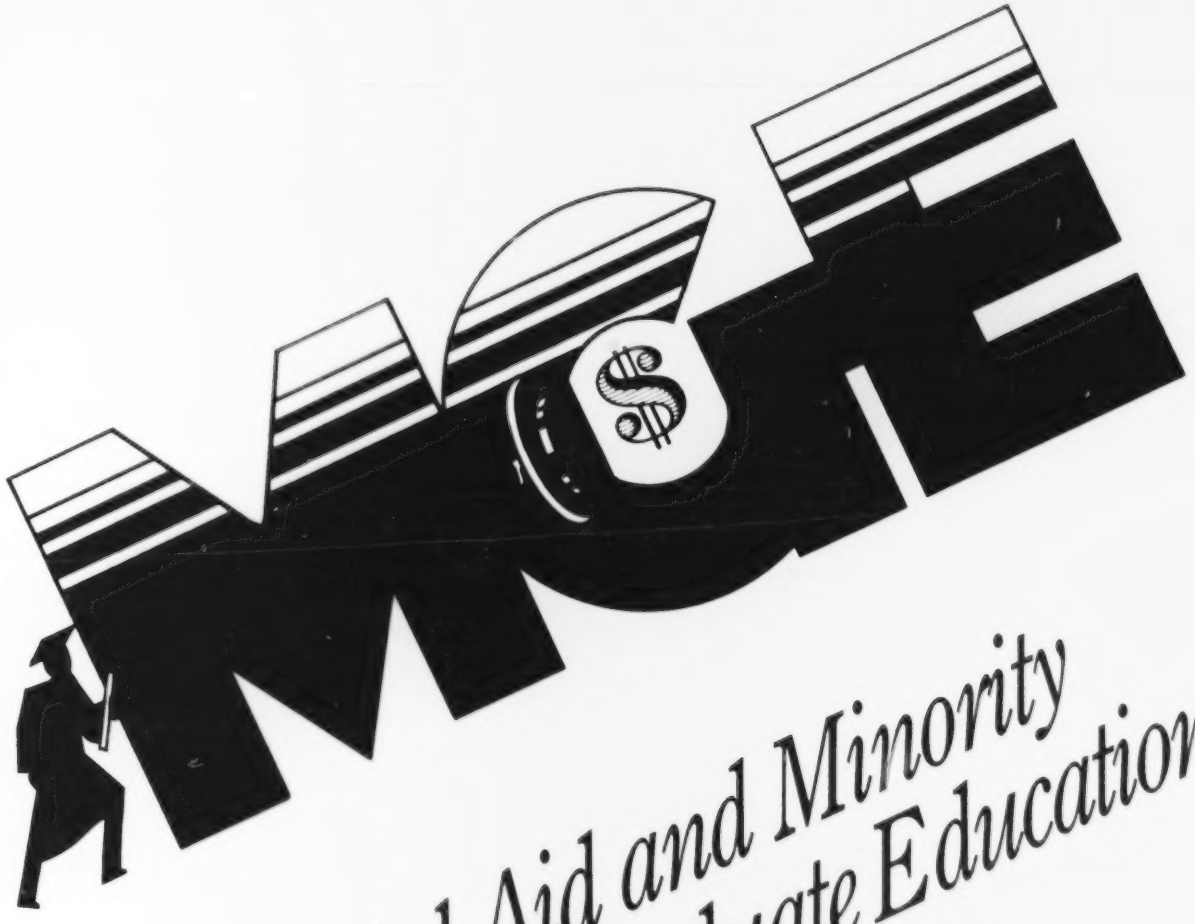

Financial Aid and Minority Participation in Graduate Education

Michael Nettles

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FINANCIAL AID AND MINORITY PARTICIPATION IN GRADUATE EDUCATION: A Research Agenda for Today

Why do so few minority recipients of bachelor's degrees go on and succeed in graduate school?

A frequent—if somewhat nebulous—answer has been that such students simply "leak" out of the education pipeline at each place where one section of pipe joins another; for example, at the transition point between undergraduate and graduate study.

Perhaps a more tangible explanation is the *cost of graduate education*. This includes not only application fees, tuition, and the like, but the indebtedness that most students face and the limited financial aid available for graduate study. Also related is the belief of some minority students that, even with a graduate degree, they will not be able to earn enough to justify the additional cost of the education.

In view of these costs, both obvious and hidden, it is likely that merely increasing the number of minority students with undergraduate degrees will not produce a corresponding increase in the number who enter and succeed in graduate education.

The problem of costs is further complicated by the fact that minority students come disproportionately from families in the lower socioeconomic strata. Historically, very few of these students, even those with high academic ability, remain in the educational system long enough to benefit from graduate education. Dresch (1974) estimated that, of the highest-ability high school graduates, those in the higher socioeconomic strata were five times more likely than those in the lowest strata to attend graduate school (34.6 percent compared with 7.4 percent). He also found that nearly 14 percent of all high school students in the former group, regardless of ability, enter graduate programs, while only 2 percent of graduates from the latter group did so. Furthermore, Dresch predicts that representation of the latter group would rise to only 5 percent if the ability distribution of low SES graduates paralleled that of the other group.

In proposing an agenda to study why minority participation in graduate education is so limited and so often unsuccessful, we need to consider:

- what kinds of financial returns minority students receive as a result of completing graduate school;
- factors that compete with graduate school for a student's time and money, especially the effects of paying off debts incurred for undergraduate education and the way students deal with personal and family expenses;
- the limited financial support available for graduate education;
- the lack of academic and social support specifically available to minority graduate students.

This paper examines how these factors affect minority students as they consider pursuing graduate education and try to complete it successfully. It also compares the differences between minority and majority students in the following areas:

- cost of graduate education;
- incentives and rewards for completing graduate degrees;
- levels of indebtedness among recipients of baccalaureate degrees;
- types of support available to those considering graduate education.

Where are they going once they graduate?

College graduates have a number of choices open to them, only one of which is enrolling full-time in a traditional graduate school program in an academic discipline. They also may:

- attend a professional school;
- secure full-time employment;
- work full-time and pursue a graduate degree part-time;
- attend graduate school full-time and work part-time.

Some of these alternatives are recent innovations; at one time it was unheard of for a student to be enrolled part-time in graduate studies. Many universities now offer graduate courses in the evenings and on weekends. Major corporations sponsor employees who want to upgrade their positions through graduate education; some even offer graduate programs themselves. In this way, they can offer programs in specific fields and in the ways they think the programs should be structured. Such corporate sponsored programs have the added benefit of attracting employees to the corporation (Eurich, 1985). These changes reflect a broader understanding on the part of graduate programs of the needs of today's students and a desire to make institutions accessible to a wider variety of students.

Despite these changes and active recruiting efforts, minority enrollment in graduate schools is disproportionately low, and most of those who do attend are enrolled part-time. In 1984-85, the most recent year for which data are available, 64.7 percent of Black and 62.5 percent of Hispanic graduate students attended on a part-time basis (Garet and Butler-Nalin, 1982).

This underrepresentation gives rise to a number of questions, some of which lack clear-cut answers:

1 Are professional programs so attractive that they draw students away from graduate education?

The answer to this question is a qualified no. Some researchers have speculated that minority students are

underrepresented in graduate schools because they choose to attend professional schools instead. Table 1 demonstrates that the percent of professional degrees awarded to Black students is only slightly higher than the percent of doctoral degrees conferred on the same group.

Hauptman (1986) noted, in connection with this data, that, in comparison with graduate schools, professional schools cost more and result in higher student debts, yet offer less financial assistance to their students. The increased costs of setting up a practice, including the skyrocketing rates of malpractice insurance, have also contributed to the small numbers of minority students considering professional schools.

In fact, many college students, rather than go on to any form of post-baccalaureate education, are entering the work force as soon as they leave college. Their undergraduate degrees, in vocational areas like business administration, engineering, and the health-related professions, have prepared them already for careers. Up to 50 percent of undergraduates postpone or never pursue graduate education, according to Garet and Butler-Nalin, 1982.[1]

[1]This estimate is for the overall population. Estimates of the percentage of minority college graduates who pursue graduate training are not available.

Table 1: 1984-85 Doctoral and Professional Degrees Awarded by Major Field and Ethnicity

	Black		Hispanic		White		Other*		
	Number	% of Major Field	Number	% of Major Field	Number	% of Major Field	Number	% of Major Field	Total Number
DOCTORAL DEGREES									
Agriculture	22	1.8	17	1.4	779	65.2	377	31.5	1,195
Architecture	5	5.6	1	1.1	53	59.6	30	33.7	89
Area Studies	3	2.3	8	6.0	105	78.9	17	12.8	133
Business	12	1.5	3	0.4	556	69.1	234	29.0	805
Communication	18	8.5	1	0.5	159	74.6	35	16.4	213
Computer Science	3	1.3	2	0.9	141	61.8	82	36.0	228
Education	492	7.4	151	2.3	5,359	80.3	675	10.0	6,677
Engineering	34	1.2	82	2.8	1,262	42.9	1,564	53.1	2,942
Foreign Language	9	2.3	41	10.3	298	74.5	52	12.9	400
Health Science	29	2.5	16	1.4	917	79.3	194	16.8	1,156
Home Economics	8	2.9	7	2.6	216	79.1	42	15.4	273
Interdisciplinary Studies	7	2.3	8	2.7	232	77.1	54	17.9	301
Law	3	3.5	1	1.2	67	77.9	15	17.4	86
Letters	23	2.0	12	1.0	982	83.9	153	13.1	1,170
Library	8	9.6	1	1.2	55	66.3	19	22.9	83
Life Science	52	1.6	65	2.0	2,660	81.3	496	15.1	3,273
Math	7	1.1	21	3.2	360	54.1	278	41.6	666
Physical Science	27	0.8	36	1.1	2,306	72.5	813	25.6	3,182
Psychology	100	3.8	46	1.7	2,374	89.4	135	5.5	2,655
Public Affairs	33	9.0	9	2.5	278	75.7	47	12.8	367
Social Science	96	3.6	63	2.4	1,872	70.7	616	23.3	2,647
Theology	55	3.8	14	1.0	1,226	84.4	157	10.8	1,452
Visual Art	15	2.3	12	1.8	564	86.6	60	9.3	651
Total	1,061	3.5	617	2.0	22,821	74.5	6,145	20.0	30,644
PROFESSIONAL DEGREES									
Chiropractic	20	0.8	36	1.4	2,427	93.5	112	4.3	2,595
Dentistry	174	3.8	122	2.7	3,886	85.4	371	8.1	4,553
Medicine	716	4.9	517	3.5	12,616	86.2	788	5.4	14,637
Optometry	14	1.3	28	2.5	976	88.0	91	8.2	1,109
Osteopathy	29	1.9	18	1.2	1,400	94.0	42	2.9	1,489
Pharmacy	30	4.6	12	1.9	456	70.4	150	23.1	648
Podiatry	35	6.0	10	1.7	517	88.8	20	3.5	582
Veterinary	36	1.7	34	1.6	2,065	95.2	35	1.5	2,170
Law	1,495	4.3	987	2.8	31,637	90.6	790	2.3	34,909
Theology	388	6.1	118	1.8	5,538	86.5	357	5.6	6,401
Other							49	100.0	49
Total	2,937	4.2	1,882	2.7	61,566	89.0	2,757	4.1	69,142

Source: Higher Education General Information Survey 1984-85
*Includes Asian-American, American Indian, and non-U.S. Citizens

2 Is a B.A./B.S. so attractive in terms of employment and income potential that a graduate degree has little more to offer?

Existing research on the benefits of graduate education focuses entirely upon the economic value of a degree to the student. Economic factors include not only the monetary enhancements possible, but also the added improvement in economic status. Less easily measurable qualities—the need to make a contribution to society, more interesting work opportunities, personal satisfaction—have yet to be explored.

The value of a graduate degree varies greatly depending upon the field and whether the minority student feels that he or she can advance professionally and economically in it. Two recent studies illustrate this:

Van House (1985) explored the benefits of a master's degree in library science to practicing librarians with undergraduate degrees. Based upon the monetary investment required for the MLS, Van House concluded that librarians never earn enough money to compensate for the cost of earning their degrees. The average beginning salary for an MLS was only $3,000 more than for an undergraduate degree.

By contrast, Ellis (1982) discovered that the financial benefits of a graduate degree in physics far exceed the costs incurred in obtaining the degree. She concluded that a physicist with a graduate degree has more employment opportunities on the university level and more prestigious opportunities in industry and government. A master's degree in physics gives a 19 percent starting salary differential over the salary for a B.S. recipient; a doctorate guarantees over 50 percent more.

Table 2 illustrates other examples of differential average income estimates for various fields. These figures, of course, are for the general population. Precise statistics for minority graduates are limited, but they suggest strongly that in many fields even a graduate degree does not ensure increased monetary rewards. Black full-time employees with five or more years of college earn nearly $7,000 less than their White counterparts, according to Bureau of the Census data.[2]

Several factors, however, compromise the usefulness of the Bureau of the Census data:

- Information is lacking on most minority groups.
- No major-field comparisons are made.
- Completion of four years of college does not necessarily mean completion of a degree.
- Completion of five years of college is not a precise enough way of distinguishing among recipients of master's and doctoral degrees and those who have attended graduate school but not completed a degree.
- The data do not reflect the reforms in recent years to eliminate employment and income discrimination; such reforms have aided minority students in their quest for graduate degrees.

3 Do opportunity costs for minority and majority students differ in a way that would explain why minority students are so underrepresented in graduate programs?

Two goals important to many prospective graduate students are: (1) the opportunity to advance in their chosen profession and (2) the opportunity to earn more. If they perceive that a graduate degree will help them achieve these goals better than a professional degree or a job will, they are more likely to pursue graduate education. Unfortunately, no research data is available in these areas. We simply don't know whether graduate education has different effects on the careers of minority and majority students, or, if so, what those differences are.

Such information would be valuable in two ways. First, it would enable graduate school administrators to work toward achieving equality in this area. Second, demonstrable evidence of the benefits and opportunities of graduate education would encourage more qualified minority students to enroll.

Existing data bases offer only limited help in analyzing opportunity cost differences between minority and majority students. For example:

- The College Placement Council compiles data annually for recipients of graduate degrees, but does not break out data on minority students.
- The National Research Council only compiles data on doctoral degrees awarded and the employment status of such recipients in the sciences and humanities.

[2]Statistics for Hispanic employees and those belonging to other minority groups are not available.

Table 2: Annual Starting Salaries for Degree Recipients in Various Fields

Field	BA	MA	PhD
Business Administration[1]	$19,992	$27,948	$27,000
Education[2]	16,500	18,015	20,960
Humanities[3]	17,016	18,624	25,700
Social and Behavioral Sciences[4]	17,916	21,564	28,500

[1]American Assembly of Collegiate Schools of Business, Fall 1986 survey

[2]Education Doctorate cited from unpublished data from Department of Defense Wage Fixing Authority 1985-86 (starting salary $20,960, maximum salary $32,886)

[3]Humanities Doctorate 1985 profile by B. D. Maxfield and P. Brown, National Academy Press, Washington, DC, 1986

[4]Social Sciences Doctorate cited from unpublished data provided by the College Placement Council, 1986

- The U.S. Bureau of the Census publishes salary data, but only for White and Black groups; furthermore, it does not distinguish among major fields or types of degrees received.

A new GRE study, currently under way at ETS, will examine the effects of financial aid and other factors upon a student's decision to enter graduate school and remain there for a full year. The study, "The Effects of Financial Assistance Upon Access, Attendance, and Persistence in Graduate School," will examine both minority and majority students.

Actual costs of graduate education

In view of the fact that the cost of graduate education is a major consideration for prospective students, it is surprising that in this area, too, there is little data that presents the actual costs and the fee assessment policies and practices of institutions. Froomkin (1983) has observed that the last such survey was made in 1965, more than two decades ago, with two previous studies in 1958 and 1963. In 1965, the U.S. Office of Education reported that the median expenses for full-time students were $2,785 annually; by 1983, Froomkin estimated that expenses had risen to $9,829.

The need for research in this area is obvious. We must know:

1 What are the costs of graduate education at different types of institutions?

2 Does the cost of graduate education prevent minority students from enrolling?

3 Does the cost determine whether a student enrolls part-time or full-time?

4 Does the cost affect attrition rates?

Analyses of HEGIS and GAPSFAS data bases could help answer these questions, while providing other useful information about financial aid.[3] A survey of graduate institutions could identify special tuition and fee policies or programs to attract and retain minority students. A follow-up survey of the students themselves would determine if such policies and programs enable them to study full-time and to persist in their studies.

Student indebtedness

Although both minority and majority students pay the same tuition rates and fees, many minority students are less able to afford them, because their families are less financially able. For this reason, minority students are more likely to go into debt in order to pay for higher education. These actual costs, rather than opportunity costs, probably explain why more minority students choose to attend school part-time. They may also be inclined to choose less expensive programs, which may not offer the range of courses they need for optimum preparation.

Added to these problems is the fact that nearly half of all students rely on loans to pay the costs of a college education. When they emerge from undergraduate school, degree in hand, they may already have personal debts of $10,000 or more. This is particularly difficult for minority students, who historically earn less than their White peers. For many, the very idea of going even more deeply into debt to pay for a graduate education is difficult to contemplate.

Unfortunately, as scholarship money and grants dwindle, obtaining a loan is increasingly the way students are financing education. Hansen (1987) noted that, as recently as 10 years ago, student loans amounted to only 17 percent of college student aid, and grants and scholarships constituted 83 percent; today the ratio is 50/50. The gradual rise in the Guaranteed Student Loan (GSL) ceiling from $2,500 to $17,500 is not only indicative of skyrocketing costs, but also demonstrates the kinds of debts that students can accumulate. The average student who takes out a loan emerges from the educational pipeline at least $6,000 in debt; at some state and many private institutions this figure can more than double.

Costs for graduate and professional degrees are even higher. Boyd and Martin (1985) estimate that the average debt for doctoral degree recipients is $13,700; for master's degree recipients, $9,000. In the field of business, the figures are even higher: $15,000 or more (Hauptman, 1986).

In view of these costs, we must ask:

1 Will the spiraling costs of an undergraduate degree discourage people from pursuing graduate education?

2 Does the debt burden affect minority and majority students differently when they make education and career decisions?

3 Is the debt burden for minority students greater than that of their majority counterparts?

Only three studies address these questions, and all three must be viewed with caution because of methodological problems, particularly in regard to sampling.

In answer to the first question, all the studies concluded, surprisingly, that debts incurred in the pursuit of an undergraduate degree do not adversely affect graduate school attendance (Boyd and Martin, 1985; Davis, 1985; and COFHE,[4] 1983). In fact, Davis discovered that students who planned on a graduate education accumulated higher debts in undergraduate school than students for whom a B.A./B.S. was a final degree.

The Davis study, however, was limited to student loan recipients from Pennsylvania; loan programs differ too widely from state to state for the findings from one state alone to be typical. The COFHE study involved graduates of some of the most prestigious, selective, and expensive private institutions in the country; therefore, these graduates are not representative. The study by Boyd and Martin was more representative than the Davis study of the national college population,

[3]The HEGIS (Higher Education General Information Survey) data base provides part-time and full-time enrollments of university-based graduate institutions, as well as tuition and fees assessed by both colleges and universities for graduate education. The GAPSFAS (Graduate and Professional School Financial Aid Service) data base provides the estimated expenditures of those graduate students who apply for federal financial assistance.

[4]Consortium on Financing Higher Education

involving 3,000 student loan recipients in 12 states, but they were able to obtain data from only 24 percent in response to their mailed questionnaire.

The answer to the second question appears to be a definite yes. Minority graduates are more likely to enter lower-income occupations and to earn lower salaries than White graduates. Because they earn less, they are less able to repay student loans. It is also true that, historically, minority and majority students choose somewhat different fields of study. Those chosen by minority students often do not have the potential for high earnings.

The answer to the final question is also yes. Because the debt burdens of minority prospective graduate students often exceed those of majority students, debts may indeed act as a deterrent. Boyd and Martin (1985) indicate that minority graduate students represented 10.4 percent of GSL recipients, two percentage points higher than for undergraduate recipients. They suggest that the increase is because graduate schools have very limited need-based aid available; therefore, students must rely on loans. A frequently heard suggestion, that minority students are reluctant to borrow for educational purposes (Boyd and Martin, 1985; Halloran, 1986; Newman, 1985), is not substantiated by adequate data.

In addition to answering the above questions more precisely, we must also engage in research to determine what effects financial indebtedness has upon whether minority students perceive graduate education as a goal within their grasp and whether they remain in the pipeline long enough to earn a degree. Specifically, we need to answer the following questions:

1 Do minority and majority prospective students have different patterns of indebtedness?

2 Is this indebtedness equally manageable for both groups?

3 Does the prospect of graduate-school debts on top of undergraduate debts deter minority students from enrolling?

4 Do accumulated debts and the debt ceiling affect the retention rate?

5 Are the debts incurred reasonable in light of a student's potential earnings?

6 Does financial indebtedness affect the field of study a person chooses and the degree he or she seeks?

The first three questions will be addressed by the current GRE research project.[5] The remaining areas will require more detailed analysis of the samples from the same study. Other helpful avenues may be the surveys of doctoral degree recipients done by the National Research Council and the surveys of recent college graduates made by the Center for Education Statistics.

Where is financial aid coming from?

In recent years, less aid has been available to prospective graduate students. As a result, fewer individuals overall are enrolling in programs of study. This reduction in aid has affected persons from minority groups, particularly prospective Black graduate students, adversely. In 1985, approximately 258,000 students received master's degrees, down from a peak of 318,000 in 1975; similarly, doctorates were down to 30,000 from a high of 34,000.

Not surprisingly, the period of greatest available financial aid was in the late 1960s and early 1970s. In 1970, for example, twice the number of students received fellowships, scholarships, and traineeships as in 1981. During the period from 1970 to 1981, the federal budget for these forms of assistance declined by more than half. The decline has continued. At the same time that grants decreased, student loans increased, going from $717 million in 1976 to nearly $3.5 billion in 1984 (NCES, 1981 and 1985).

As government grants dry up, students are turning increasingly to institutions for assistance. Colleges and universities have stepped up their grants nearly tenfold between 1965 and 1981—from $150 million to $1 billion. Private foundations, industry, states, and other sources have added $126 million to the pot, but their contributions still amount to only 7.6 percent of the total.

Unfortunately, this shift from the federal to the private sector has had profound effects on the ability of Black students to afford graduate school. White and Hispanic students have also been affected, but not so profoundly. Table 3 illustrates the significant decline in graduate degrees earned by Black students, as well as a modest increase in the number of doctorates earned by Hispanic students.

[5] See page 4 for a description of the project.

Table 3: Number and Percent Change in Graduate Degrees Awarded

Production in Selected Years 1976-77 and 1984-85

	Master's Degrees Awarded			Doctoral Degrees Awarded		
	1976-77	1984-85	% Change	1976-77	1984-85	% Change
Black	21,015	12,817	−39.9%	1,251	1,061	−15.2%
Percent of Total	7.0%	5.4%		4.3%	3.5%	
Hispanic	7,046	6,331	−10.0%	534	617	+15.5%
Percent of Total	2.4%	2.7%		1.8%	2.0%	
Total	299,040	263,675	−11.8%	29,360	30,644	+4.5%

Source: Higher Education General Information Survey 1976-77 and 1984-85

Some conclusions and an agenda

It is apparent that we will never be able to increase the numbers of minority students in graduate institutions and keep them there until they graduate unless we come to understand better the financial pressures that they face. We know that the costs of higher education, both actual and implied, are tremendous, and that they have been spiraling upward for the past decade. We realize that minority students are historically less able to deal with these costs, because many of them come from families in lower socioeconomic strata. This is further complicated by the indebtedness most students must assume in order to pursue both undergraduate and graduate education.

Research simply is not available to tell us all we need to know about these factors. If it were, we could begin to recommend financial aid policies to achieve greater minority involvement and success in graduate education. Future research must find answers to the following questions:

1 What financial aid programs are currently available; what are their budgets; how many and, particularly, how many minority students participate?

2 What makes some programs more effective in achieving minority access and retention than others?

3 What is being done about financial assistance by states under federal court order to achieve greater minority representation in graduate education?

4 What types and amounts of financial aid will increase minority access and retention?

5 What are state and federal governments, professional associations, philanthropic foundations, and colleges and universities doing about the problem? What should they be doing?

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